

Plumbing Q & A 2008

Attention: ✓ Denotes a new question!

★ Denotes a revised/revisited question.

December 2008

Quarter

General:

- 1) *(Q) Designers when calculating small assembly occupancies less than 50 people are allowed to use the Business occupancy for egress and separation requirements. May the Business occupancy also be used for the Plumbing fixture requirements?*

(A) No. The less restrictive occupancy applies to egress and separation ONLY!

- 2) *(Q) How does the Code address the freeze protection of plumbing systems installed in seasonal facilities like a swim club?*

(A) Section 305.6 of the NC Plumbing Code addresses frost protection with respect to occupied structures but does not really address the protection of a seasonal facility. DOI suggests that the designer develop a plan for protection of the system which includes not only winterizing of the system but perpetuation of a policy of protection.

A design example would be:

- All piping below grade shall be a minimum of 12" deep.
- The contractor shall install a $\frac{3}{4}$ " x $\frac{1}{2}$ " tee in the horizontal portion of the distribution system prior to the vertical riser. The branch shall be turned downward. The branch shall then loop upwards to a hose bibb (w/VB) mounted in the restroom for wash down purposes.
- The remainder of the system shall be installed per the Code.
- The Winterizing procedures shall be posted on a permanent placard in the office or restroom/s.

Winterizing procedures example:

- Shut off water at the meter.
- Connect small pump to wash down hose bibb.
- Open cold side of lavatory faucet furthest away from pump.
- Open up hose bibb and pump down contents of water distribution system.
- Flush toilets, holding down flush handle until tank is empty.
- Pour antifreeze solution in toilet, lavatory, shower and floor drain traps.

This is only an example of one approach. The designer needs to develop an approach based on his sights circumstances and make that approach a part of the project's submittal.

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General continued:

- 3) (Q) *What fixtures are required to go through a grease collection device?*
(A) **1003.3.1 Grease traps and grease interceptors required.** A grease trap or grease interceptor shall be required to receive the drainage from fixtures and equipment with grease-laden waste located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, school kitchens, bars, factory cafeterias, or restaurants and clubs.
- 4) (Q) *May a plumbing contractor permit and install a water heater in entirety (heater, flue & gas piping)*
(A) **Yes**
- 5) (Q) *Is a contractor allowed to "field fabricate" internal piping on a grease interceptor.*
(A) **No! All internal piping shall be done by the manufacturer.**
- 6) (Q) *Who would be responsible for a water hammer occurring to an existing water distribution system after the addition of a yard sprinkler system?*
(A) **The Code requires the installation of shock absorbers at any quick closing valves, such as washing machines and dish washers. The Code would require additional shock absorbers to be installed with any sprinkler system utilizing quick closing solenoid valves.**
- 7) (Q) *Would a plumber have to replace a existing saddle valve serving a humidifier, when the unit is replaced?*
(A) **The valve would be considered "existing" and exempt. Should the saddle valve need moving or replacement, it would have to be capped and abandoned. The Code does not support the use of saddle valves.**
- 8) (Q) *Who has the responsibility for turning down FHA straps for the proper number of holes/fasteners?*
(A) **The Building Inspector.**
- 9) (Q) *What does the inspector look for when making a follow up inspection on a job that was previously failed?*
(A) **The inspector inspects the items failed from the previous inspection and does not re-inspect the entire job. If in the process an obvious defect is encountered, they may flag it for correction.**
- 10) (Q) *On commercial projects, what is the earliest time the inspector should arrive for inspections?*
(A) **The inspector should not arrive before 8 am unless prior arrangements have been made.**

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General continued:

- 11) (Q) *What does the inspector look for when inspecting shower heads?*
(A) The inspector primarily looks for proper anchoring of the head. It is the contractor's responsibility to install any flow restriction required by the Code.
- 12)✓ (Q) *May an owner request that the contractor provide the minimum number of fixtures required by the Code on a residential high rise condo and record those inspections under a "shell" permit?*
(A) The owner may elect to install the minimum number of fixtures required by the Code. The installation of other fixtures later would require additional permitting and inspections. The records of the plumbing installation results shall be placed on an "Upfit" permit. Shell permits can contain records of work that is "common" to all units and exclude piping above the ground floor.
- 13)✓ (Q) *What are the rules for connecting several pan drains together?*
(A) The Code does not specifically address the joining of several safety pan drains. Mecklenburg County will allow the connection of up to three (3) pan drains together into a single collector. No increase in drain size is required.

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Equipment:

- 1) *(Q) Do lowboy type water heaters require the t&p discharge line to be secured?*
(A) Yes!
- 2) *(Q) How do you thermally protect vertical discharge lines on sewage ejectors installed outside?*
(A) You may use weather proof R 6.5 pipe insulation on all exposed discharge lines or put a manufactured hut with a rating of R 6.5 over the discharge line. The ejector's vent shall terminate in open air.
- 3) *(Q) May a water heater safety pan drain discharge to a sealed floor having a centrally located floor drain?*
(A) Mecklenburg County will consider that floor a waste receptor for this application only.
- 4) *(Q) Do water heaters installed in Mobile Homes have to meet the NC Plumbing Code?*
(A) No. They are covered under HUD rules and regulations (Federal Gov)
- 5) *(Q) May you connect several water heater safety pans together in a single header?*
(A) Yes, provided that the pans make indirect connections into a waste receptor hub and the vertical header makes an indirect connection to a centrally located waste receptor, storm drain hub or discharges to the outside of the structure.
- 6) *(Q) May you connect HVAC condensate into the same pan drain header?*
(A) yes provided the waste receptor on each floor is protected by a trap seal and the centrally located waste receptor on the ground floor is protected with a trap seal and primer when flowing to sanitary.
- 7) *(Q) May you pump from one ejector pump to another?*
(A) Yes provided that the pumps are sized for all respective loads and the first /upstream pump discharges into the end of a 10' long, properly graded gravity line which flows into the reservoir of the second/downstream pump. This will reduce oscillations of the float down stream pump's float switches due to probable pump velocities.

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Equipment: continued

- 8) (Q) Are commercial high heat (180°) dishwashers violating the maximum temperature stated in 701.7 when they discharge their waste water?
(A) No! They speak of high heat usually associated with steam producers. The discharge water from commercial dishwashers is 130 to 140 degrees after completing a wash cycle.
- 9)✓ (Q) May a grease trap serving a single fixture discharge indirectly into a floor sink, hub drain or floor drain?
(A) Yes
- 10)✓ (Q) Do pressure reducing or similar valves have to be insulated when placed in unconditioned space?
(A) Yes

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Fixtures:

- 1) *(Q) May a new restaurant use the "Core Facilities" for their spaces minimum fixture count?*
(A) Yes, provided the core contains enough fixtures to cover the minimum requirements for the entire floor taking into consideration the various occupancy types. The Code allows designer to locate core facilities on every other floor (same bldg.) as long as you don't exceed the travel distance. In those cases, the core facilities shall have enough fixtures to serve both floors.
- 2) *(Q) May an owner lock or install security hardware on public restrooms?*
(A) No! A unisex restroom is the only restroom allowing locks
- 3) *(Q) Do hand sinks in a kitchen have to be directly connected to the sanitary drain line?*
(A) Yes, and it should not be connected to the greasy waste system unless approved by the Code Official.
- 4) *(Q) Does a dishwasher hose, looped under a kitchen cabinet, require a clamp at the top of the loop?*
(A) The dishwasher loop needs to be secured as high as possible. This may be accomplished with a clamp or you may drill a hole at the uppermost part of the cabinet partition and loop the hose over to the sink connection thereby securing the loop as high as possible.
- 5) *(Q) How close do water and drain escutcheons have to be to the wall?*
(A) There should be no more than a 1/4" gap between the wall and the escutcheon.
- 6) *(Q) What does the Code require of surfaces surrounding water closets and urinals?*
(A) The Code requires:
 - **Urinals = [B] 419.3 Surrounding material.** Wall and floor space to a point 2 feet (610 mm) in front of a urinal lip and 4 feet (1219 mm) above the floor and at least 2 feet (610 mm) to each side of the urinal shall be waterproofed with a smooth, readily cleanable, nonabsorbent material.
 - **Water Closets = No requirements in the Plumbing Code.**

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Land Use and Environmental Service Agency
(Code Enforcement)

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Fixtures: continued

- 7) (Q) *What are the requirements of water coolers placed in hallways?*
(A) Chapter 10 of NC Accessibility Code requires the placement of “wing-walls” where wall mounted water coolers with a leading edge more than 27” above finish floor level. The maximum the water cooler may protrude into the space is 4”.
- 8) (Q) *What inspections are required on a custom built shower pan?*
(A) The plumbing contractor is required to water test the pan with a minimum 2” of standing water. The contractor should call in for a “rough” inspection with “shower pan” in the remarks field.
- 9) (Q) *Would a nightclub have to provide a drinking fountain or can they claim the same exemption as a restaurant because they are a similar A-3 occupancy?*
(A) They can claim the same exemption provided they provide “FREE” water to the customers.
- 10) (Q) *May upfits of one building share restrooms with another building’s core facility provided that the adjacent building is accessed by a covered walkway?*
(A) No!
- 11) (Q) *What is the difference between restrooms (located in a typical “core” area) designated “CORE” facilities and restrooms designated convenience facilities?*
(A) Core facilities refer to restrooms containing sufficient fixtures to cover the floor’s occupancy use and the square footage. Convenience facilities refer to a quantity of fixtures less than those required to serve the entire floor.
- 12) (Q) *May designers utilize the “core” for some of the Code required fixtures for a given tenant upfit?*
(A) No! There may be no sharing of fixtures between a tenant and the core. The core either has enough fixtures for the entire floor area or each tenant shall be responsible for their own minimum code required facilities.
- 13) (Q) *May designers utilize Core restrooms from the floor below or the floor above the upfit to meet the Code requirements?*
(A) Yes, provided the restrooms meet the total requirements for both floors and the travel distance, door to door, does not exceed 500 feet.

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Fixtures: continued

- 14) (Q) *May tenant spaces in a strip shopping center share restroom facilities?*
(A) Yes provided the facilities are sized accounting for the various occupancies and their square footage and the restrooms are located such that each tenant may access them with passing through another tenant space.
- 15) (Q) *May tenants access their restroom facilities from outside the structure where they may be subject to the elements?*
(A) No! Sections 403.4, 403.5 and 403.6 stipulate the facilities must be within the building or tenant space and may be located on the floor above or below the tenant space. There are a few exceptions such as guard shacks, kiosk and storage structures within 500 feet and under the same ownership, lease or control.
- 16)✓ (Q) *May lavatories that are part of restrooms above that required by the Code, be placed outside adjacent to the restroom?*
(A) No! NCDOL has ruled that lavatories shall be placed inside the restrooms they serve so that an individual who has soiled their hands will not contaminate door hardware nor be embarrassed having to wash them in a public non-private venue.
- 17)✓ (Q) *What are the requirements for the quantity of washing machines in apartments?*
(A) The Code requires one washing machine connection per twenty units located in an accessible location in lieu of connections in each unit. Nothing requires the installation of the equipment.

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Venting:

- 1) *(Q) What are the requirements for using a dry vent on a combination waste and vent system?*
(A) A dry vent shall take off at an angle of not less than 45 degrees (0.785 rad) from the horizontal.
- 2) *(Q) Are AAV's allowed in an acid waste system?*
(A) The Code requires that acid waste vents be vented to the outside of the structure. However we do allow as an alternative method (case by case), the use of a listed and approved AAV in island situations provided the acid waste is very weak and the designer shows satisfactory documentation to the Code Official.

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Drainage & Storm:

- 1) *(Q) May condensate drains or t&p discharge lines drain into traps located above a ceiling?*
(A) Section 802.3 requires that these waste receptors be readily accessible which by definition would prohibit the use of ladders or a panel.
- 2) *(Q) May a secondary (emergency) roof drain system discharge onto the floor or roof area of an enclosed parking deck?*
(A) No. The area drains of a parking deck would be connected to the primary system of the deck. The Code is quite specific that there shall be no comingling of the two systems. In this case, the secondary (emergency) system shall discharge to the outside of the structure and not a primary system of an adjacent structure.
- 3) *(Q) May a 4" two-way C/O serve a 3" building drain as well as the 4" sewer? (Reprinted from 2007)*
(A) Yes, provided the connection to the 3" building drain is made with fittings resulting in no ledges that would hinder the use of sewer cleaning equipment.
- 4) *(Q) Where does the air gap need to be placed on a three compartment sink with a stand alone grease trap?*
(A) Between the grease trap and the hub drain.
- 5) *(Q) Where does the Code require an air gap from the sink tailpiece and the waste receptor in restaurants?*
(A) Air gaps on the drainage system are required at food handling sinks, floor drains located in food storage freezers or refrigerators, ice bins or potable clear waste. All other indirect waste may have either an air gap or an air break.
- 6) *(Q) Does the main building vent have to be installed on "shell" projects?*
(A) If you install a building drain (of any length), you have to provide a main vent.
- 7) *(Q) May a contractor install an oversize sewage lift tank in case of a power outage?*
(A) No! Pump tanks should be sized where the effluent is not stored more than 12 hours. Sewage stored longer begins to break down the same as in septic tanks. The utility (CMUD) does not want pretreated sewage as it disrupts the enzyme action at the treatment plant.

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Water Service/Distribution:

- 1) (Q) *Do expansion tanks have to be ASME rated?*
(A) No.
- 2) (Q) *Do yard hydrants require in line RP or Double Check valves?*
(A) No. You may use the appropriate atmospheric vacuum breaker.
- 3) (Q) *When a water service is replaced, does the Code require the structures electrical service to be grounded (ground rod)?*
(A) Yes, if the system is not already grounded with a ground rod. (See 601.3)
- 4) (Q) *When are shock absorbers required?*
(A) **604.9 Water hammer.** The flow velocity of the water distribution system shall be controlled to reduce the possibility of water-water-hammer. A water-hammer arrestor shall be installed where quick-closing valves (clothes washers and dishwashers) and copper metallic piping is used. The water-hammer arrestor shall not be required on any valves where plastic pipe is used for water distribution piping. Water-hammer arrestors shall be installed in accordance with the manufacturer's specifications. Water-hammer arrestors shall conform to ASSE 1010.
Note: Plastic piping systems shall not contain copper piping with exception of a termination fitting.
- 5) (Q) *Are the new ZURN polymer pex fittings approved by the Code?*
(A) Yes. The 2006 IPC fitting table (ASTM I2159)

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